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MONTHLY NOTICES

OF THE

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The Rev. R. MAIN, President, in the Chair.

Robert Bellamy Clifton, Esq., St. John's College, Cambridge;
Horace Deighton, Esq., Principal of the Collegiate School, Trinidad;
Benjamin Scott, Esq., Chamberlain of London; and
Lieut. W. L. Searle, H.M. Indian Navy,

were balloted for and duly elected Fellows of the Society.

In a letter to the Foreign Secretary, dated Gotha, 1860, March 7th (written in German), M. Hansen, after expressing his warmest thanks to the Royal Astronomical Society for the Medal awarded to him, and requesting to be furnished with some copies of the President's address, continues as follows:

"The Lunar Tables are a work which has occupied me for several years, partly on account of the great number of the perturbation inequalities, which can only be accurately obtained by successive approximations, and partly because the comparisons with observations which are necessary for the amendment of the elliptic elements are very laborious and take much time. But as I had proposed to myself to work out as well the theory as the Lunar Tables themselves, as completely and accurately as was possible for me, it was necessary, besides the assistance which I was able to dispose of for the mechanical calculations, to occupy myself almost continuously therewith, and even myself to work out a part of the numerical calculations.

"It would have been impossible to accomplish this great

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work without pecuniary assistance, and I was fortunate enough at the commencement of the undertaking to obtain from the Danish Government an allowance, which, however, ceased long before the completion of the work. A sum for the same purpose was afterwards allowed me by the British Government, and by this means, and the application of what I could myself contribute, it is become possible for me to complete the Lunar Tables. I shall be always grateful to the above-mentioned governments for the assistance afforded me to the completion of the Lunar Tables, but I have not been able to finish them without the expenditure from my own resources of what is for me a considerable sum. It is therefore an especial pleasure for me to see that my Lunar Tables exhibit a very good agreement with observations, and that I may thus consider that I have accomplished not only an important scientific work, but one which will also be of utility for Geography and Navigation.

"I am now occupied in putting together the theoretical calculation of the coefficients of the Perturbations of the Moon, and shall soon have the first part thereof ready for the press."

Remarks on the Controversy respecting the Secular Acceleration of the Moon's Mean Motion. By the Rev. R. Main, President.

In a recent number of the *Astronomische Nachrichten*, namely, No. 1241, is a paper by Dr. Hartwig of Schwerin, entitled *Berechnung der Mondfinsternisse des Almagest mittelst der Hansen'schen Sonnen-und-Mondtafeln*, which deserves attention from its connexion with the disputed question of the amount of the lunar acceleration. The object of the author is to compare the observed times and magnitudes of nineteen ancient eclipses recorded by Ptolemy, with the times and magnitudes of the same derived by computation from Hansen's Tables, with the view of proving the superior accuracy of these tables, and the data which he employs are derived almost exclusively from a prize essay by Zech, published in 1851, entitled *Astronom. Untersuch. uber die Mondfinsternisse des Almagest.*

For the purpose of establishing the superiority of Hansen's tables he compares the data of the Almagest also with the results derived from Damoiseau's Tables, and finds, both for the magnitudes and the times of the eclipses, that the sum of the squares of the differences between theory and observation is considerably smaller for Hansen than for Damoiseau. There is, however, one remarkable circumstance connected with the tabular errors of the times of maxima, which the author has not adverted to, but which deserves considerable attention, namely, that out of

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